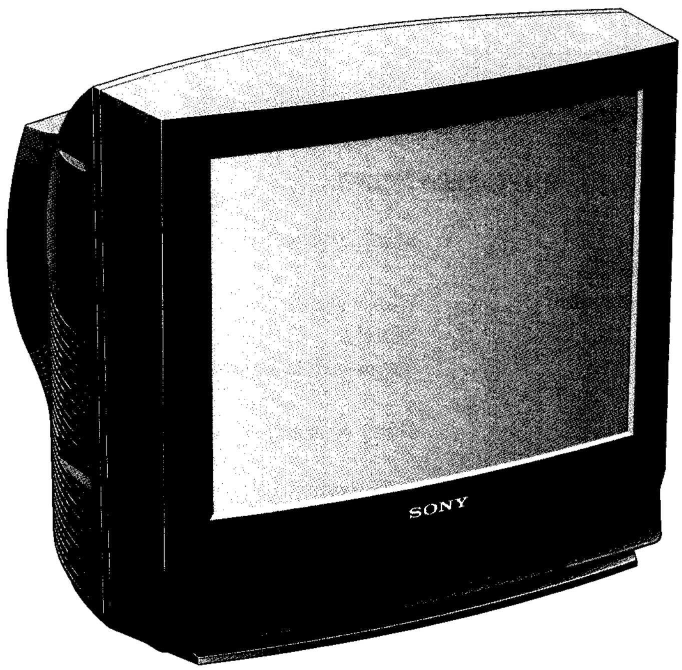
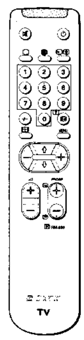
SERVICE MANUAL

BE-4A CHASSIS

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21M3A	RM-836	Italian	SCC-J05FA
KV-21T3A	RM-836	Italian	SCC-J05GA
KV-21M3B	RM-836	French	SCC-J06HA
KV-21T3B	RM-836	French	SCC-J06JA
KV-21M3D	RM-836	AEP	SCC-J08GA
KV-21T3D	RM-836	AEP	SCC-J08HA
KV-21M3E	RM-836	Spanish	SCC-J04GA
KV-21T3E	RM-836	Spanish	SCC-J04HA

MODEL	COMMANDER	DEST.	CHASSIS NO.
KV-21M3K	RM-836	OIRT	SCC-J03KA
KV-21T3K	RM-836	OIRT	SCC-J03LA
KV-21M3L	RM-836	Irish	SCC-J02EA
KV-21T3L	RM-836	Irish	SCC-J02FA
KV-21T3R	RM-836	OIRT	SCC-J03MA
KV-21M3U	RM-836	UK	SCC-J01FA
KV-21T3U	RM-836	UK	SCC-J01GA





MICROFILM

TRINITRON® COLOR TV

SONY®

ITEM MODEL	Television System	Channel Coverage	Colour System
Italian	B/G/H	VHF: E2-E12, S1-S20 UHF: E21-E69, S21-S41 HYPER: S1-S41	PAL
French	B/G/H, L	VHF: E2-E12, F2-F10, B-Q UHF: E21-E69, F21-F69 HYPER: S1-S41	PAL, SECAM
AEP	B/G/H	VHF: E2-E12 UHF: E21-E69 HYPER: S1-S41	PAL, SECAM
Spanish	B/G/H	VHF: E2-E12 UHF: E21-E69 HYPER: S1-S41	PAL
OIRT	B/G, D/K	B/G VHF: E2-E12 UHF: E21-E69 D/K VHF: R01-R12 UHF: R21-R69 Hyper : S1-S41	PAL, SECAM
Irish UK	I	UHF: U21-U69 VHF: A-J (Irish) UHF: U21-U69 (UK)	PAL

MODEL	21M3A 21T3A	21M3B 21T3B	21M3D 21T3D	21M3E 21T3E	21M3K 21T3K 21T3R	21M3L 21T3L	21M3U 21T3U
Power Consumption	58W	58Wh	58W	58W	58W	58W	75W

SPECIFICATIONS

Picture Tube	Super Trinitron Approx. 54.5 cm (21 inches) (Approx. 51 cm picture measured diagonally)

Rear/Front Terminals

[REAR]

1 21-pin Euro connector (CENELEC standard)
- Inputs for audio / video signals
- Inputs for RGB

[FRONT]

Video (phono jack)
Audio (phono jacks)
Headhpone jack - minijack

Sound output	4W (RMS) 5W (music power)
Dimensions	518x474x488 mm approx.
Weight	Approx. 20 kg
Supplied accessories	RM-836 Remote Commander (1) IEC designated batteries (2)
Other features	TELETEXT (for KV-21T3 models)

[RM-836]

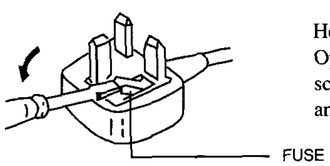
Remote control system	Infrared control
Power requirements	3V dc (2 batteries) R6 (size AA)
Dimensions	Approx. 210x45x24 mm (w/h/d)
Weight	Approx. 90g (Not including battery)

Design and specifications are subject to change without notice.

Item \ Model name	KV-21M3A KV-21T3A	KV-21M3B KV-21T3B	KV-21M3D KV-21T3D	KV-21M3E KV-21T3E	KV-21M3K KV-21T3K KV-21T3R	KV-21M3L KV-21T3L KV-21M3U KV-21T3U
PIP	OFF	OFF	OFF	OFF	OFF	OFF
MPIP	OFF	OFF	OFF	OFF	OFF	OFF
Scart 1	ON	ON	ON	ON	ON	ON
Scart 2	OFF	OFF	OFF	OFF	OFF	OFF
Front in (3)	OFF	OFF	OFF	OFF	OFF	OFF
Scart 4	OFF	OFF	OFF	OFF	OFF	OFF
Projector	OFF	OFF	OFF	OFF	OFF	OFF
AKB in 16:9 mode	OFF	OFF	OFF	OFF	OFF	OFF
Norm B/G/H	ON	ON	ON	ON	ON	OFF
Norm I	OFF	OFF	OFF	OFF	OFF	ON
Norm D/K	OFF	OFF	OFF	OFF	ON	OFF
Norm L	OFF	ON	OFF	OFF	OFF	OFF
Language Preset	Italian	French	German	Spanish	OIRT	English

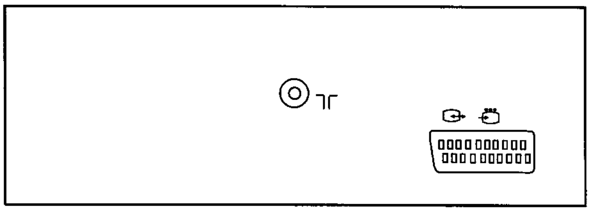
WARNING (KV-21M3L/21T3L/21M3U/21T3U only)

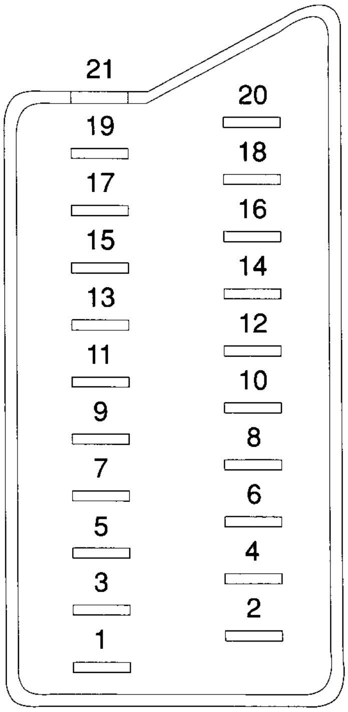
The flexible mains lead is supplied connected to a **B.S. 1363** fused plug having a fuse of **5 AMP** capacity. Should the fuse need to be replaced, use a **5 AMP FUSE** approved by **ASTA** to **BS 1362**, ie one that carries the ASTA mark.
IF THE PLUG SUPPLIED WITH THIS APPLIANCE IS NOT SUITABLE FOR YOUR SOCKET OUTLETS IN YOUR HOME.
IT SHOULD BE CUT OFF AND AN APPROPRIATE PLUG FITTED.
THE PLUG SEVERED FROM THE MAINS LEAD MUST BE DESTROYED AS A PLUG WITH BARED WIRES IS DANGEROUS IF ENGAGED IN A LIVE SOCKET OUTLET.
When an alternative type of plug is used it should be fitted with a **5 AMP FUSE**, otherwise the circuit should be protected by a **5 AMP FUSE** at the distribution board.



How to replace the fuse.
Open the fuse compartment with the screwdriver blade and replace the fuse.

21 pin connector (1)





Pin No.	1	2	4	Signal	Signal Level
1	○	○	○	Audio output B (Right)	Standard level : 0.5V rms Output impedance : Less than 1k ohms*
2	○	○	○	Audio input B (Right)	Standard level : 0.5V rms Output impedance : More than 10k ohms*
3	○	○	○	Audio output A (Left)	Standard level : 0.5V rms Output impedance : Less than 1k ohm*
4	○	○	○	Ground (Audio)	
5	○	○	○	Ground (Blue)	
6	○	○	○	Audio input A (Left)	Standard level : 0.5V rms Output impedance : Less than 10k ohm*
7	○	●	●	Blue input	0.7 ± 3dB, 75 ohms, positive
8	○	○	○	Function select (AV control)	High state (9.5 - 12V) : Part mode Low state (0 - 2V) : TV mode Input impedance : More10k ohms Input capacitance : Less than 2nF
9	○	○	○	Ground (Green)	
10	○	○	○	Open	
11	○	●	●	Green	
12	○	○	○	Open	
13	○	○	○	Ground (Red)	
14	○	○	○	Ground (Blanking)	
15	○	–	–	Red input	0.7 ± 3dB, 75 ohms, positive
	–	○	○	(S signal) croma input	0.7 ± 3dB, 75 ohms, positive
16	○	●	●	Blanking input (Ys signal)	High state (1 - 3V) Low state (0 - 0.4V) Input impedance : 75 ohms
17	○	○	○	Ground (Video output)	
18	○	○	○	Ground (Video input)	
19	○	○	○	Video output	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
20	○	–	–	Video input	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
	–	○	○	Video input Y (S signal)	1V ± 3dB, 75ohms, positive sync : 0.3V (-3 + 10dB)
21	○	○	○	Common ground (plug, sheild)	

○ Connected ● Not Connected (Open) * at 20Hz - 20kH:

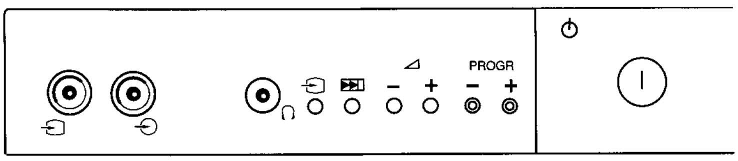


TABLE OF CONTENTS

CAUTION

SHORT CIRCUIT THE ANODE OF THE PICTURE TUBE AND THE ANODE CAP TO THE METAL CHASSIS, CRT SHIELD, OR CARBON PAINTED ON THE CRT, AFTER REMOVING THE ANODE.

WARNING !!

AN ISOLATION TRANSFORMER SHOULD BE USED DURING ANY SERVICE TO AVOID POSSIBLE SHOCK HAZARD, BECAUSE OF LIVE CHASSIS.
THE CHASSIS OF THIS RECEIVER IS DIRECTLY CONNECTED TO THE AC POWER LINE.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY SHADING AND MARK ⚠ ON THE SCHEMATIC DIAGRAMS, EXPLODED VIEWS AND, IN THE PARTS LIST ARE CRITICAL FOR SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

ATTENTION

APRES AVOIR DECONNECTE LE CAP DE L'ANODE, COURT-CIRCUITER L'ANODE DU TUBE CATHODIQUE ET CELUI DE L'ANODE DU CAP AU CHASSIS METALLIQUE DE L'APPAREIL, OU AU COUCHE DE CARBONE PEINTE SUR LE TUBE CATHODIQUE OU AU BLINDAGE DU TUBE CATHODIQUE.

ATTENTION !!

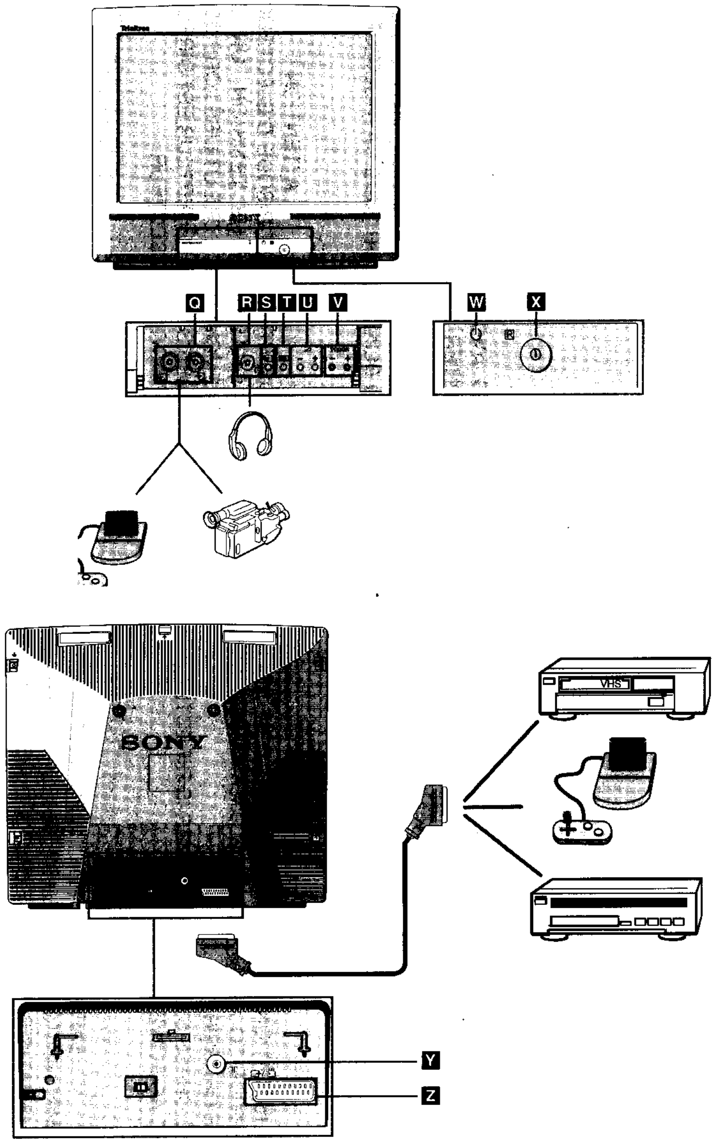
AFIN D'EVITER TOUT RISQUE D'ELECTROCUTION PROVENANT D'UN CHÂSSIS SOUS TENSION, UN TRANSFORMATEUR D'ISOLEMENT DOIT ETRE UTILISÉ LORS DE TOUT DÉPANNAGE. LE CHÂSSIS DE CE RÉCEPTEUR EST DIRECTEMENT RACCORDÉ À L'ALIMENTATION SECTEUR.

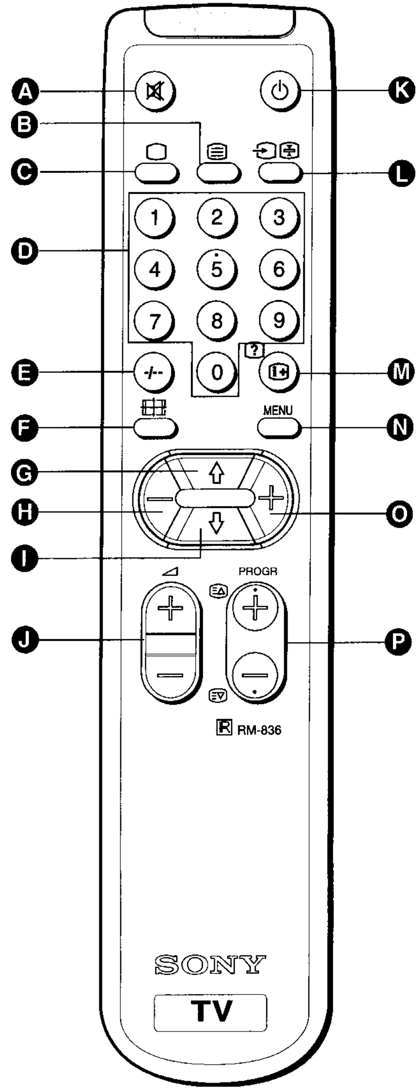
ATTENTION AUX COMPOSANTS RELATIFS À LA SÉCURITÉ!!

LES COMPOSANTS IDENTIFIÈS PAR UNE TRAME ET PAR UNE MARQUE ⚠ SUR LES VUES EXPLOSÉES ET LES LISTES DE PIECES SONT D'UNE IMPORTANCE CRITIQUE PUR LA SÉCURITÉ DU FONCTIONNEMENT. NE LES REMPLACER QUE PAR DES COMPOSANTS SONY DONT LE NUMÉRO DE PIÉCE EST INDIQUÉ DANS LE PRÉSENT MANUEL OU DANS DES SUPPLÉMENTS PUBLIÉS PAR SONY.

SECTION 1 GENERAL

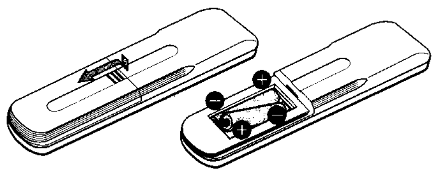
The operating instructions mentioned here are partial abstracts from the Operating Manual. The page numbers of the Operating Instruction Manual remain as in the manual.





Step 1

Inserting the Batteries into the Remote Commander



Step 2

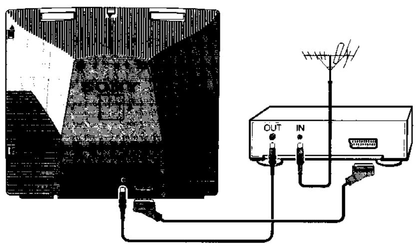
Connecting the Aerial

If you are connecting a VCR, skip to step 3.

Connect an external aerial to the socket ⏉ Y.

Step 3

Connecting a VCR



- It is recommended to tune in the VCR signal to programme number "0". For details, see "Presetting Channels Manually" on page 12.

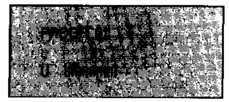
Step 4

Presetting Channels Automatically

TV searches for all available channels. If manual tuning is preferred see Menu option - Presetting Channels Manually.

1 Plug into mains.
Press power switch ⏻ X on TV set.

2 Press and hold ⏭ T on TV set for about 2 seconds.
Auto tuning starts and the following screen shows.



Notes
- When Auto tuning stops the programme on position 1 is seen.
- **Non Teletext models (KV-21M3U/21M3L only)**
  – channels are stored in no particular order.
- **Teletext models (KV-21T3U/21T3L only)**
  – channels are automatically stored as follows:

	KV-21T3U	KV-21T3L
Programme 1	BBC1	RTE1
Programme 2	BBC2	RTE2
Programme 3	ITV	BBC1
Programme 4	CH4 or S4C	BBC2
Programme 5	CH5 (if available in your area)	ITV
Programme 6	-	CH4 or S4C
Programme 7	-	CH5 (if available in your area)

TV Operation

This section explains functions used whilst watching TV. Most operations are carried out using the Remote Commander.

To	Press
Switch on	ⓘ X on TV
Switch off temporarily	⏻ K TV is now in standby mode, ⏻ indicator W on TV lights.
Switch on again	▢ C, PROGR +/- P V or any number button D
Switch off completely	ⓘ X on TV To save energy we recommend switching off completely when TV is not in use.
Select programmes	PROGR +/- P V or number buttons D For double digit numbers press -/-- E then the number e.g. For 23, press -/-- E then 2 and 3.
Display the programme number	ⓘ+ M Press again to make programme number disappear.
Adjust the volume	◿+/- J U
Mute the sound	🔇 A Press again to restore sound.
View video input	⇥ L S Press ▢ C to return to TV programme.
View RGB input (eg to connect playstation)	⇥ L S twice. RGB ⇥ will appear on screen Press ▢ C to return to TV programme.
View programmes in 16:9 mode	⊞ F Press again to return to 4:3 mode. **Note •** ⊞ F is to be used to optimise the viewing of 16:9 signals, which will be available in the future.

Viewing Teletext

Teletext is an information service broadcast by TV stations.

1 Select the channel which carries the teletext service you wish to receive.

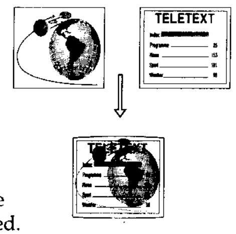
2 Press ⊜ B to switch on teletext.

3 Input three digits for the page number using the programme number buttons D or PROGR +/- P V.

4 Press ▢ C to switch off teletext.

Note • Teletext errors may occur if the broadcasting signals are weak.

Using Other Teletext Functions



Superimposing teletext on the TV

Press ⊜ B once in teletext mode or twice in TV mode to superimpose teletext on the TV screen.
Press ⊜ B again to cancel superimposing.

Freezing a teletext subpage

Press ⊜ L (HOLD) to freeze the subpage. Freezing the page prevents the information that is displayed from being updated.
Press ⊜ L to cancel HOLD and allow update to continue.

Revealing concealed information (eg: answers to a quiz)

Press ⓘ M to reveal information.
Press again to conceal the information.

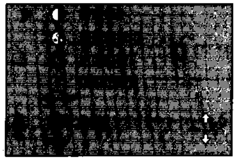
Using colour buttons to access pages

When the colour coded menu appears at the bottom of a page, press the colour button (red, green, blue or yellow) H G I O to access the corresponding page.

Note • A programme status message in a blue box may appear when you change programmes (depends on broadcasters).

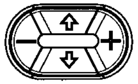
Use buttons on Remote Commander to control Menu screen.

MENU
MENU Ⓝ
Menu Screen
on/off



Green Ⓖ
scroll up

Red Ⓗ
decrease



Yellow Ⓞ
increase/confirm(OK)

Blue Ⓘ
scroll down

Adjusting the Picture

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select the item you wish to change.

Symbol	Item	- Effect	+
◑	Picture	Less	More
◕	Colour	Less	More
☼	Brightness	Darker	Brighter
⏀	Sharpness	Softer	Sharper

3 Press red Ⓗ or yellow Ⓞ button to change levels.

4 Press MENU Ⓝ to return to normal TV screen.

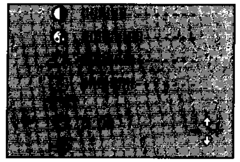
Note • To reset to factory preset picture levels, press green Ⓖ or blue Ⓘ button to select →← and press yellow (OK) Ⓞ button.

Using the Sleep Timer

The TV may be set to switch to the standby mode automatically after a length of time chosen by you. You may set the time in 30 minutes steps up to 4 hours.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ⏻.



3 Press red Ⓗ or yellow Ⓞ button to set time delay.
0.00 (OFF) 0.30 1.00 1.30 .... 4.00

4 Press MENU Ⓝ to return to normal TV screen.
When watching TV, press ⊞Ⓜ to display time remaining.

Auto Standby
(for TV mode only)

As a safety feature the Auto Standby function has been added to this model.
If no signal is received for a period of 30 minutes, the TV will automatically switch to standby mode.

To return to normal TV operation, press ▢ Ⓒ, PROGR +/- Ⓟ Ⓥ or any other number button Ⓓ.

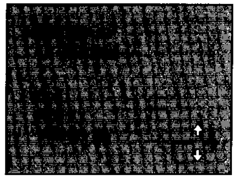
Presetting Channels Manually

Up to 100 programme positions are available for presetting channels.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ⇳ and press yellow (OK) Ⓞ button.

3 Select programme number using PROGR +/- ⓅⓋ or the number buttons Ⓓ.



4 Press green Ⓖ or blue Ⓘ button to select tuning bar (||||||····) and press red Ⓗ or yellow Ⓞ button to start channel search. When a channel is found the tuning bar stops moving and you see the picture.

5 If you want to store, press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button. If you do not want to store, press red Ⓗ or yellow Ⓞ button to continue search.

6 Repeat steps 3 to 5 for all other channels.

7 Press MENU Ⓝ to return to normal TV screen.

Skipping Programme Positions

You can skip unused programme positions when selecting channels with the PROGR +/- ⓅⓋ buttons. You can still select them, however, using the number buttons Ⓓ.

1 Press MENU Ⓝ.

2 Press green Ⓖ or blue Ⓘ button to select ⇳ and press yellow Ⓞ button.

3 Select programme number you want to skip using PROGR +/- ⓅⓋ button or number buttons Ⓓ.



4 Press green Ⓖ or blue Ⓘ button to select Coo and press yellow (OK) Ⓞ button.

5 Press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button to store.

6 Repeat steps 3 to 5 for other unused programme positions.

7 Press MENU Ⓝ to return to normal TV screen.

Note • To restore a skipped programme number, refer to "Presetting Channels Manually".

Fine-Tuning Channels

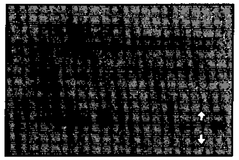
You can fine tune a stored channel if necessary.

1 Select the channel you wish to fine tune.

2 Press MENU Ⓝ.

3 Press green Ⓖ or blue Ⓘ button to select ⇨ and press yellow (OK) Ⓞ button.

4 Press green Ⓖ or blue Ⓘ button to select ←F→ and use red Ⓗ or yellow Ⓞ button to adjust tuning.



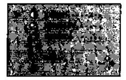
5 Press green Ⓖ or blue Ⓘ button to select ◇ and press yellow (OK) Ⓞ button to store.

6 Press MENU Ⓝ to return to normal TV screen.

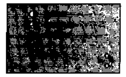
Exchanging Programme Positions

After tuning you may wish to change the order of the channels on your TV.

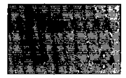
1 Press MENU Ⓝ.



2 Press green Ⓖ or blue Ⓘ button to select ⇨ and press yellow (OK) Ⓞ button.

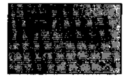


3 Press green Ⓖ or blue Ⓘ button to select PROGR ⇆ and press yellow (OK) Ⓞ button.

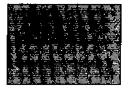


4 Press red Ⓗ or yellow Ⓞ button until the channel you wish to rearrange appears on screen, then press the blue button once.

5 Press red Ⓗ or yellow Ⓞ button to select the new programme number (eg PROGR 01) for your selected channel.



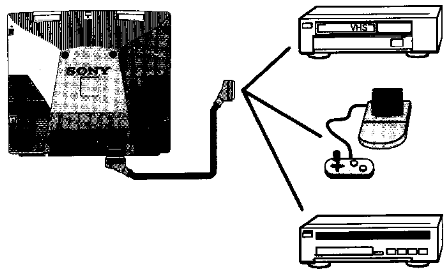
6 Press blue Ⓘ button to select ⇆ and press yellow (OK) Ⓞ button to exchange the channels.



7 Repeat steps 4 to 7 if you wish to change the order of the other channels on your TV.

8 Press MENU Ⓝ to return to normal TV screen.

Using the Connectors



Your TV has one 21-pin connector Z on the rear of the set and two connectors (phono jacks: video, audio) Q on the front of the set. You can connect optional audio or video equipment to these connectors, such as a VCR, video games or a video disc player.

1 Press L S to view the video input signal.

2 Press L S again to view RGB / playstation signal. RGB will appear on screen.

3 Press L S or ▢ C to return to the normal TV screen.

Note • To avoid picture distortion, do not connect equipment to the 21-pin connector and the front connectors at the same time.

Connecting Headphones

Plug in the headphones to the ∩ R socket on the front of the TV set to mute the sound from the speaker.

Troubleshooting

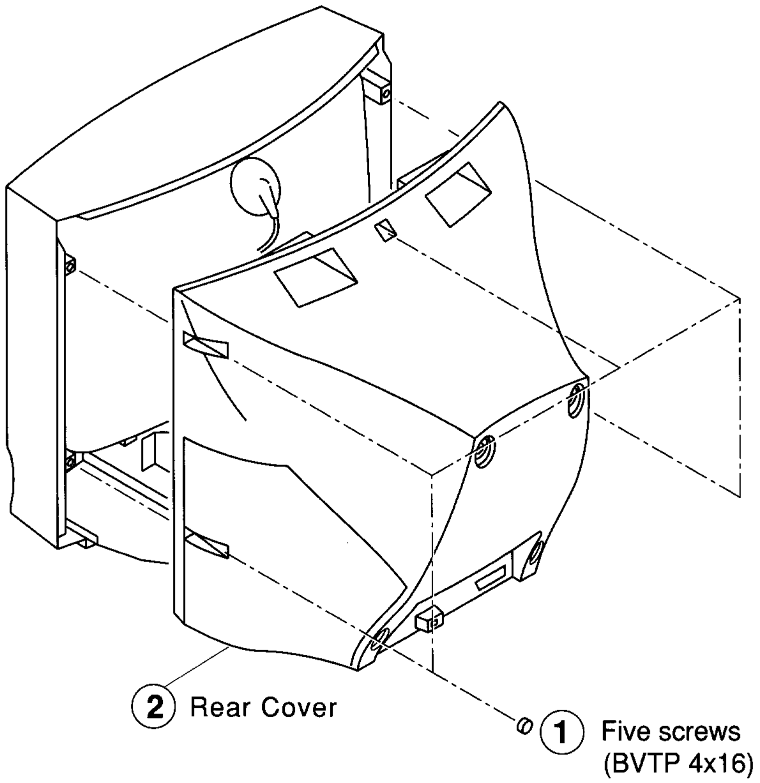
Here are some simple solutions to the problems which affect the picture and sound.

Problem	Solution
No picture, screen is dark, no sound	• Plug the TV in. • Press ① X on the TV. • Press ▢ C or the programme number D on the remote commander if ⏻ indicator W is on. • Check the aerial connection. • Check that the video source is on. • Turn the TV off for 3 or 4 seconds and then turn it on again using ① X.
Poor or no picture (screen is dark, sound is good)	• Press MENU N and adjust brightness picture and colour levels.
Good picture, no sound	• Adjust the volume ◿ +/– J U. • Disconnect any headphones. • Press 🔇 A if 🔇 is displayed on the screen.
No colour on colour programmes	• Press MENU N and adjust colour balance. • Press MENU N and reset to factory settings.
Distorted picture when you change programmes or select teletext	• Turn off the equipment connected to the 21-pin connector Z when this equipment is not in use.
Remote commander does not function	• Replace the batteries.

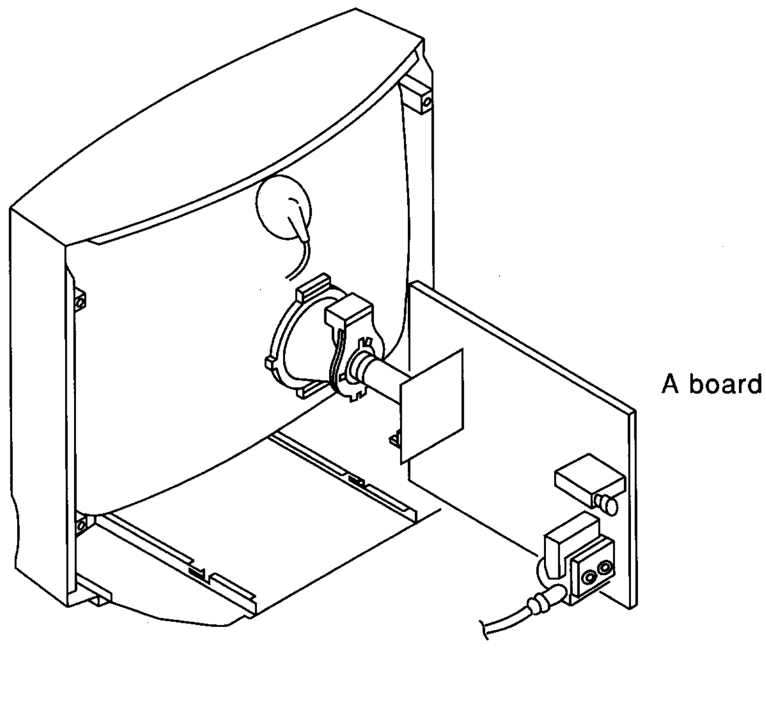
- **If you continue to have these problems, have your TV serviced by qualified personnel.**
- **NEVER open the casing yourself.**

SECTION 2
DISASSEMBLY

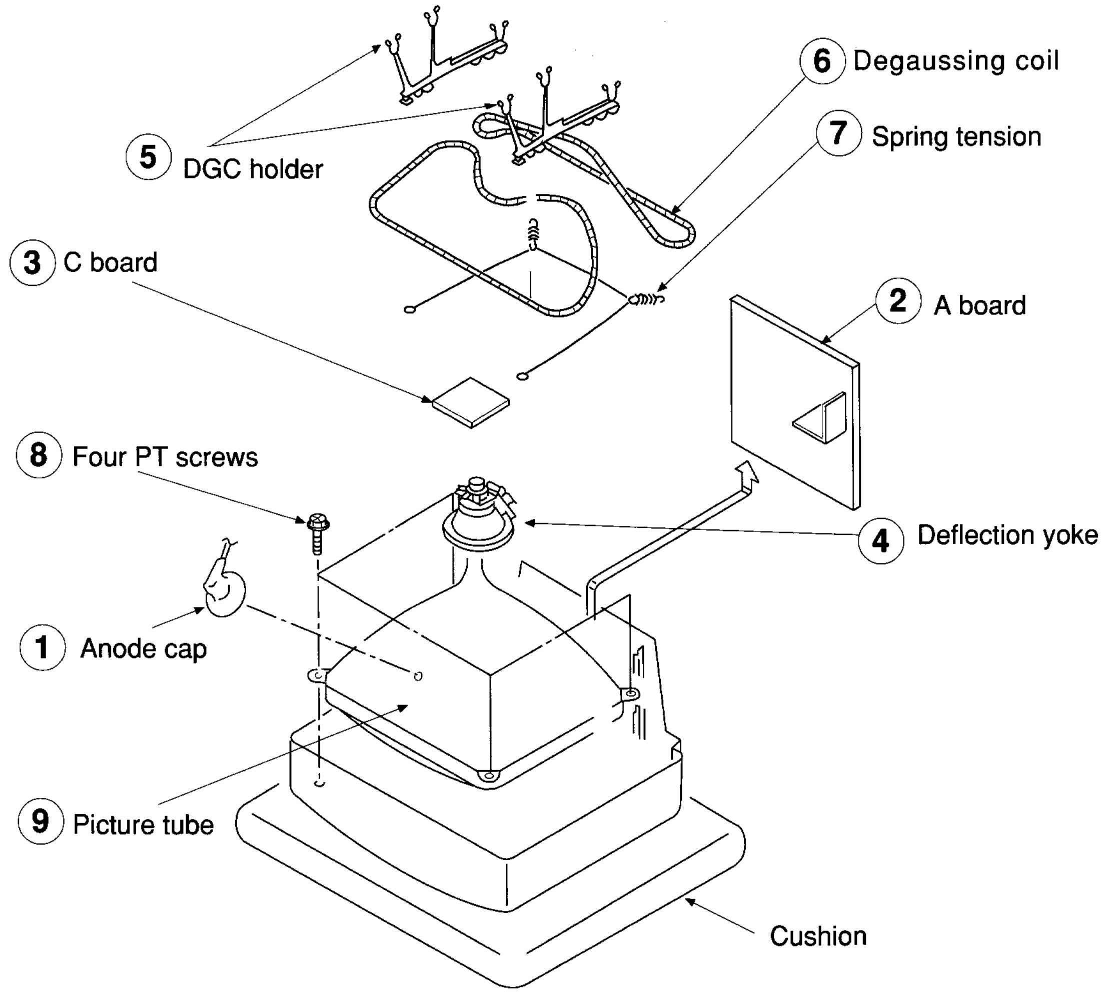
2-1. REAR COVER REMOVAL



2-2. SERVICE POSITION



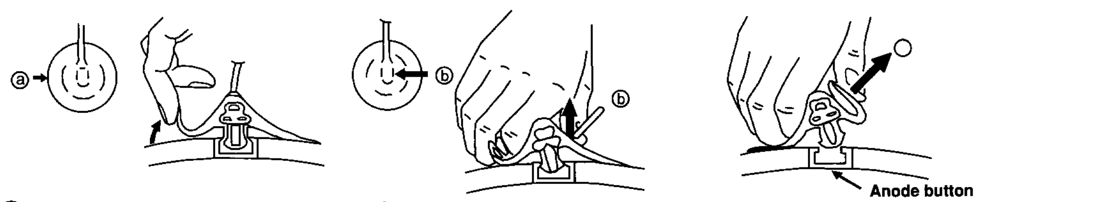
2-3. PICTURE TUBE REMOVAL



• REMOVAL OF ANODE-CAP

Note: Short circuit the anode of the picture tube and the anode cap to the metal chassis, CRT shield or carbon paint on the CRT, after removing the anode.

* **REMOVING PROCEDURES.**



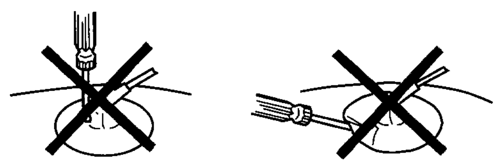
① Turn up one side of the rubber cap in the direction indicated by the arrow ⓐ

② Using a thumb pull up the rubber cap firmly in the direction indicated by the arrow ⓑ

③ When one side of the rubber cap is separated from the anode button, the anode-cap can be removed by turning up the rubber cap and pulling it up in the direction of the arrow ⓒ

• HOW TO HANDLE AN ANODE-CAP

① Don't damage the surface of anode-cap with sharp shaped material !
② Don't press the rubber hardly not to hurt inside of anode-caps !
A metal fitting called as shatter-hook terminal is built into the rubber.
③ Don't turn the foot of rubber over hardly !
The shatter-hook terminal will stick out or damage the rubber.



SECTION 3
SET-UP ADJUSTMENTS

- The following adjustments should be made when a complete realignment is required or a new picture tube is installed.
- These adjustments should be performed with the rated power supply voltage, unless otherwise noted.

The Contrast and Brightness controls should be set as follows unless otherwise noted:

◑ CONTRAST control 80%
(or Normal by commander)
☼ BRIGHTNESS control 50%

Perform the adjustments in the following order:
1. Beam Landing
2. Convergence
3. Screen (G2), Drive, White Balance, Sub Colour and Sub Brightness.
4. Focus

Note: Test Equipment Required.
1. Colour bar/Pattern Generator
2. Degausser
3. DC Power Supply
4. Digital multimeter
5. Oscilloscope

Preparation:
- In order to reduce the influence of external magnetic forces on the picture tube, face the TV set in an easterly or westerly direction.
- Turn the power switch for the unit ON and erase the magnetic force using a degausser.

3-1. BEAM LANDING

Demagnetize with a degausser.
1. Input an all white raster signal from the pattern generator.
   CONTRAST } normal
   BRIGHTNESS }
2. Switch the raster signal of the pattern generator to Red.
3. Move the deflection yoke backward, and adjust with the purity control so that Red is at the centre and the Blue and Green are evenly spaced at the sides. see (Fig. 3-1 - 3-3)
4. Move the deflection yoke forward, and adjust so that the entire screen becomes Red. (Fig. 3-1)
5. Switch the raster signal to Blue and then Green to confirm the condition.
6. When the position of the deflection yoke has been determined, tighten it with the deflection yoke mounting screw.
7. When the landing at the corners is not correct, adjust by using disk magnets. (Fig. 3-4)

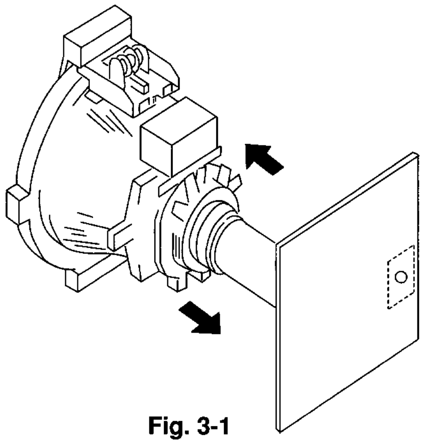


Fig. 3-1

Fig. 3-2

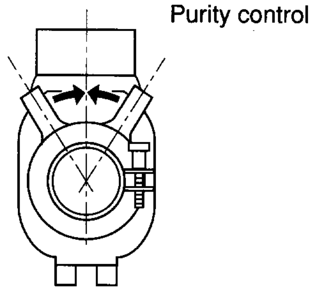


Fig. 3-3

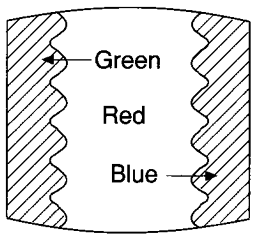
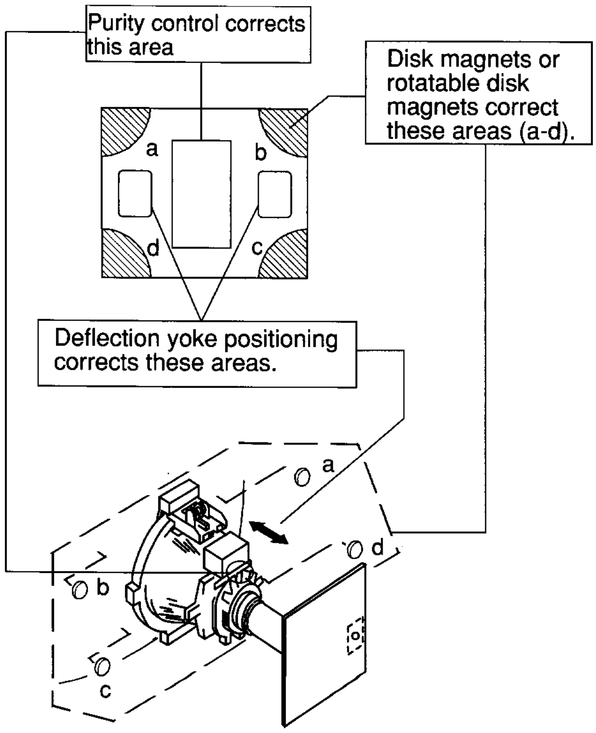


Fig. 3-4

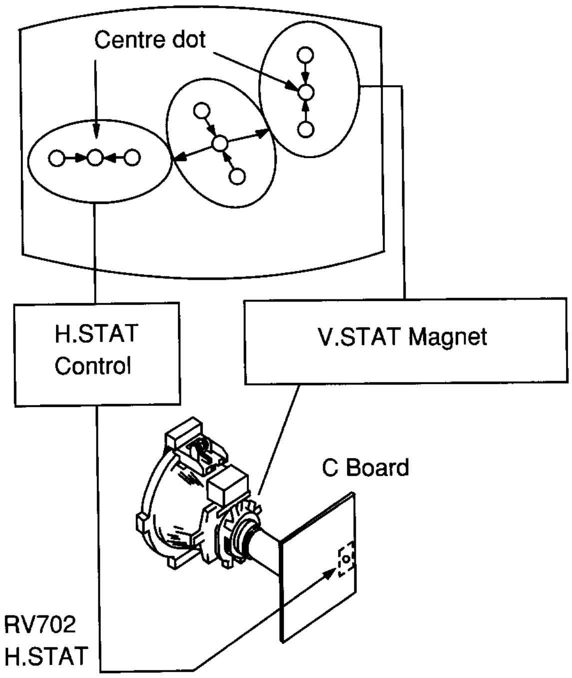


3-2. CONVERGENCE

Preparation:

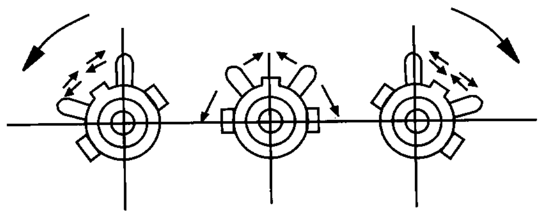
- Before starting, perform FOCUS, H.SIZE, and V.SIZE adjustments.
- Set the BRIGHTNESS control to minimum.
- Input a dot pattern from the pattern generator.

(1) Horizontal and Vertical Static Convergence

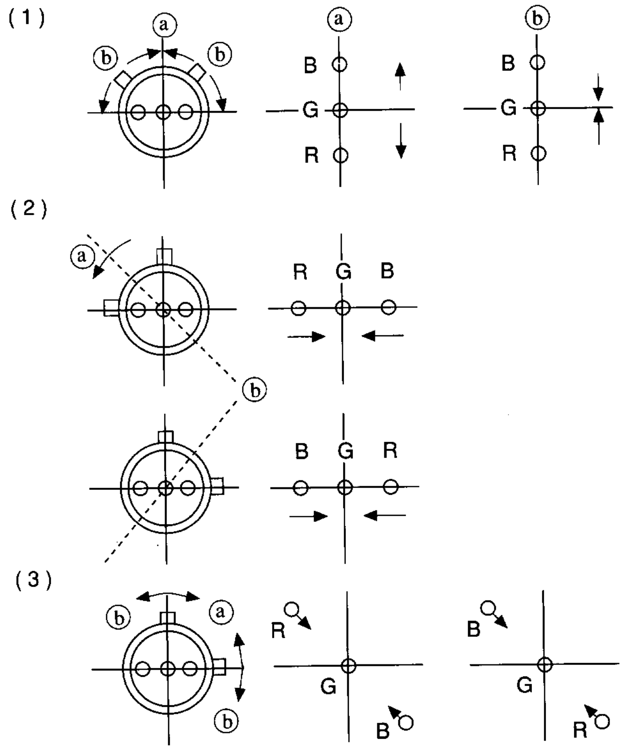


1. Adjust the H.STAT control to converge the Red, Green and Blue dots at the centre of the screen. (Horizontal movement)
2. Adjust the V.STAT magnet to converge the Red, Green and Blue dots at the centre of the screen. (Vertical movement)

- If the horizontal dots cannot coincide with variable range of the H.STAT convergence, adjust together with the V.STAT convergence while tracking.
  (Adjust the convergence by tilting the V.STAT convergence or by opening or closing the V.STAT convergence.)



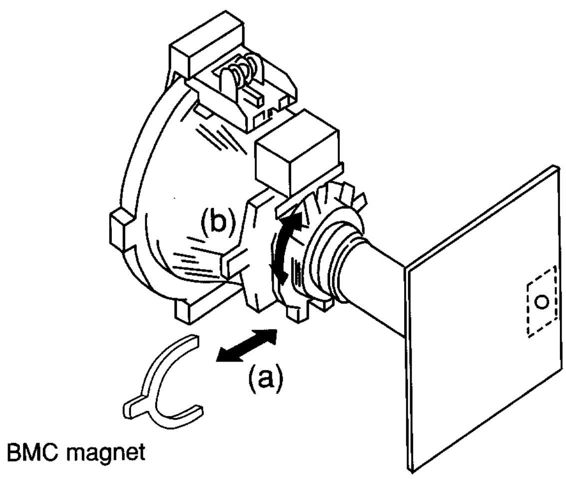
3. When the V.STAT magnet is moved in the direction of the ⓐ and ⓑ arrows, the Red, Green and Blue dots move as shown below.



If the Red and Blue dots do not converge with the Green dots, perform the following steps.

1. Move the BMC magnet (a) to correct for insufficient H.static convergence.
2. Rotate the BMC magnet (b) to correct for insufficient V.static convergence.

In either case, repeat the Beam Landing Adjustment.

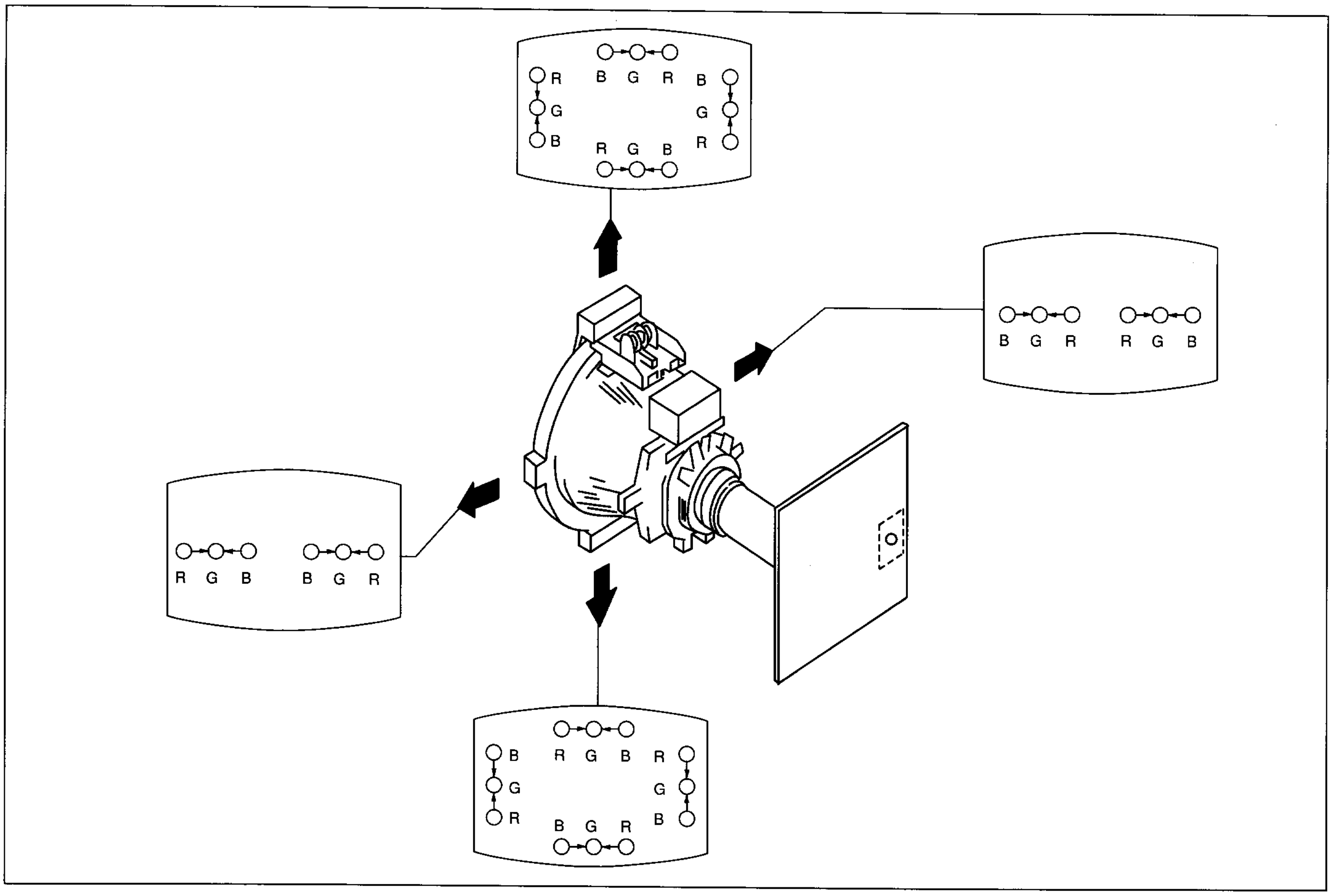


(2) Dynamic Convergence Adjustment

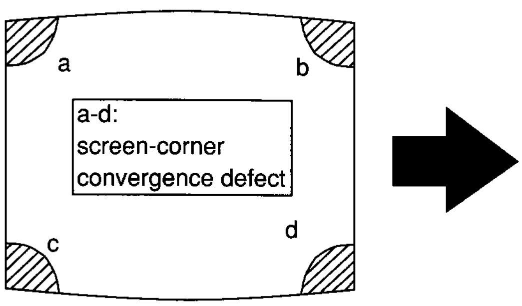
Preparation:

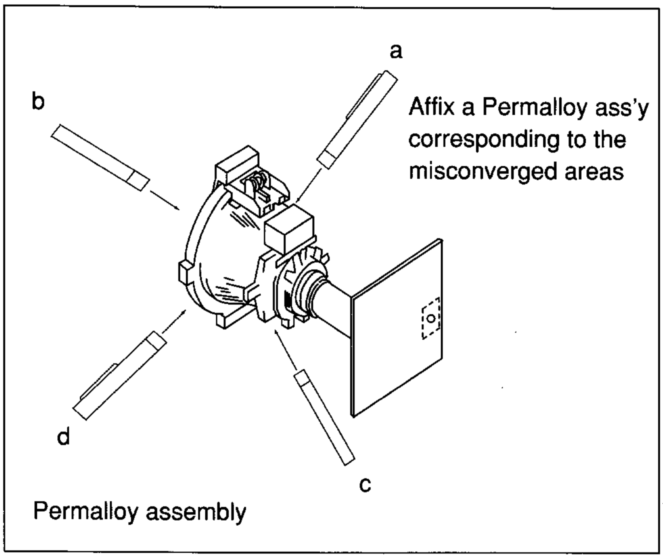
- Before starting to perform the Horizontal and Vertical static convergence adjustment.

1. Slightly loosen the deflection yoke screw.
2. Remove the deflection yoke spacers.
3. Move the deflection yoke for best convergence as shown below.
4. Tighten the deflection yoke screw.
5. Install the deflection yoke spacers.

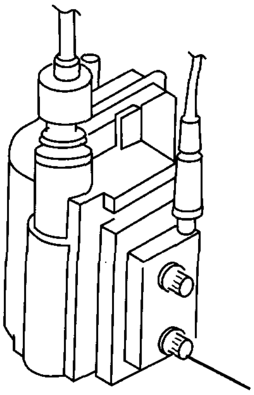


(3) Screen-corner Convergence.





3-3. SCREEN (G2), DRIVE, WHITE BALANCE, SUB COLOUR and SUB BRIGHTNESS.

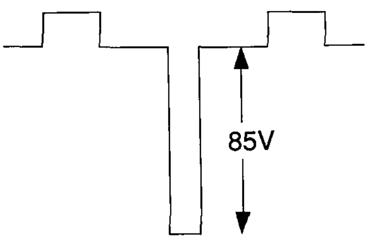


Screen (G2) setting

1. Input a 0 IRE (Black Level) signal from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 38.
3. Adjust SCREEN VR until the Down arrow is displayed.
4. Adjust SCREEN VR until the Down arrow just disappears.
5. Press the TV Button on the Remote Commander to store the data.

Drive Level

1. Input a Video signal containing a small area of 100% white on a black background.
2. Connect an oscilloscope to Pin 10 of J701 (R OUT) on the C Board.
3. Set the Picture to maximum using "Test""Test" and 01.
4. Enter into the Service mode (Adjust Menu).
5. Using the Blue and Green buttons select "RED HWB".
6. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform has an amplitude of 85V.

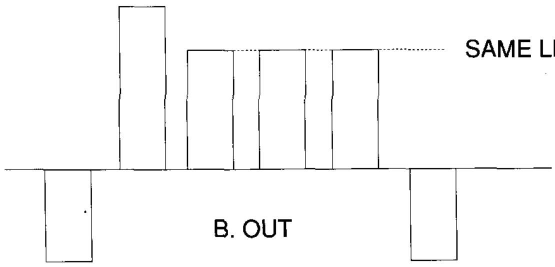


White Balance Adjustment

1. Input an all white pattern from the pattern generator.
2. Adjust the Colour and Brightness controls to the standard level.
3. Enter into the Service Mode.
4. Adjust the Green HWB and Blue HWB so that the White Balance becomes optimum.

Sub Colour Adjustment

1. Input a PAL colour bar pattern from the pattern generator.
2. Connect an oscilloscope to Pin 8 of J701 (B OUT) on the C Board.
3. Enter into the Service Mode "Test""Test" and 22.
4. Using the Red and Yellow buttons on the Remote Commander adjust until the oscilloscope waveform becomes as follows :



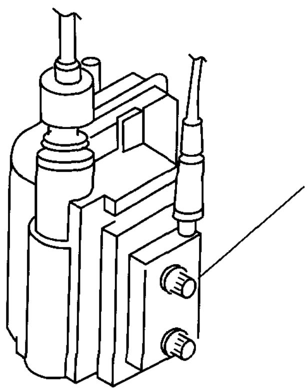
Note : If the TV is able to receive PAL and SECAM transmissions, repeat the above procedure using a Secam colour bar signal.

Sub Brightness Adjustment

1. Input a Philips pattern from the pattern generator.
2. Enter into the Service Mode "Test""Test" and 23.
3. Using the Red and Yellow buttons on the Remote Commander adjust until the 0 IRE of the grey scale and the cut off are only slightly visible on the screen.

3-4. FOCUS

1. Receive a television broadcasting.
2. Normalize the picture setting.
3. Adjust the focus control on the flyback transformer to become the focus in the centre area properly.
   Bring only the centre area of the screen into focus, the magenta-ring appears on the screen. In this case, adjust the focus to optimize the screen uniformly.



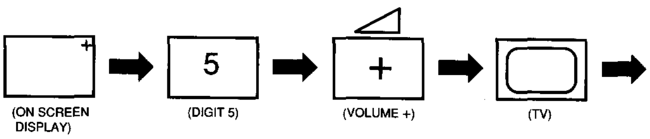
SECTION 4
CIRCUIT ADJUSTMENTS

4-1. ELECTRICAL ADJUSTMENTS

Service adjustment to this model can be performed with the supplied Remote Control Commander RM-836.

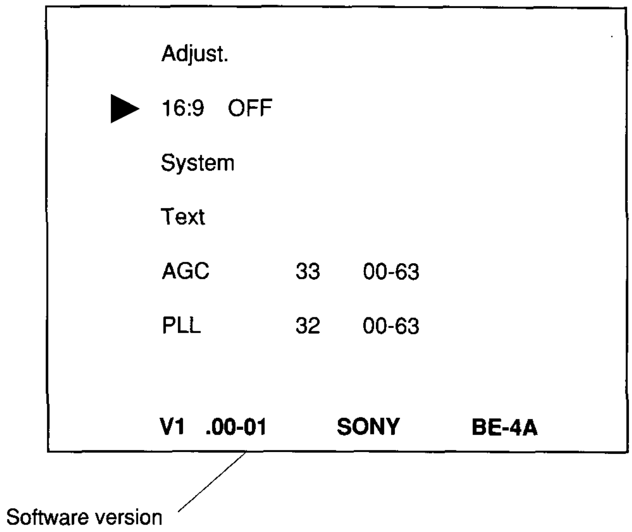
HOW TO ENTER INTO SERVICE MODE

1. Turn on the main power of the set and enter into stand-by mode.
2. Press the following sequence of buttons on the Remote Control Commander.



"TT-- " will appear in the top right corner of the screen Other status information will also be displayed.

3. Press the MENU button on the Remote Commander to obtain the menu on the screen.



4. Press the Blue (Next) or Green (previous) buttons to select the adjustment item from the table.
5. Press the Yellow (+) or Red (-) buttons to change the data as required.
6. Turn off the power to quit the service mode when adjustments are completed.

Range of adjustments available from the on screen menu system.

Adjustment	Set	Range
16:9 OFF	Select	ON/OFF
System	Select	BG-L, BG-DK UK, Eire, BG
Text	Select	EAST/WEST
AGC	Adj	00 - 63
PLL	Adj	00 - 63
B&W Delay	Adj	00 - 63
Ver Size	Adj	00 - 63
Ver, Breath	00	00 - 63
Par, Ampl	00	00 - 63
Par, Tilt	32	00 - 63
V, Linear	Adj	00 - 63
Corn, corr	00	00 - 63
V, Cen or EW	Adj	00 - 63
V, Position	42	00 - 63
H, Centre	Adj	00 - 63
Blue HWB	Adj	00 - 63
Green HWB	Adj	00 - 63
Red HWB	Adj	00 - 63

4-2. TEST MODE 2:

TT -- Mode is available by pressing the Test button twice, O.S.D 'TT --' appears. The functions described below are availal by pressing two digits. To release the 'TT --' mode, press 0 twice, press 'TEST' , press 'TV' or switch the TV into Stand-by

00	Cancel test mode, return to normal viewing mode.
01	Set picture level maximum
02	Set picture level minimum
03	Set volume to 35% of maximum
04	Set volume to 50% of maximum
05	Set volume to 65% of maximum
06	Set volume to 80% of maximum
07	Enable Ageing condition
08	Set TV shipping conditions
09	No function
10	No function
11	Enable of disable the RGB input feature
12	Enable or disable the Text Contrast level offset
13	Select odd or even field for non-interlaced teletext
14	Select interlaced or non-interlaced teletext display
15	Copy the software deafult setting to the last power memory
16	No function
17	Enable or Disable the sharpness adjust feature
18	Enable or disable the teletext operation (SSA5291 only)
19	Enable or Disable the NTSC reception facility
20	No function
21	Sub Picture Adjustment
22	Sub Colour Adjustment (different stored locations for PAL & SECAM)
23	Sub Brightness Adjustment
24	Enable tuning for systems B/G/L
25	Enable tuning for systems B/G/D/K
26	Enable tuning for system I (UHF only)
27	Enable tuning for system I (VHF-L, VHF-H & UHF)
28	Enable tuning for system B/G
29	Sub brightness adjustment with picture at absolute zero

30	No function
31	Adjust the teletext & OSD Horizontal position (SSA5296 & SSA5498 only)
32	No function
33	Perform auto AGC adjustment
34	Perform auto PLL adjustment
35	Enable or Disable the auto standby feature
36	No function
37	Set Vertical size minimum and go to ZOOM1 mode
38	Enter G2 factory adjustment mode
39	Restore Vertical size and go to ZOOM3 mode
40	No function
41*	Write all default data to the NVM
42*	No function
43*	Write default geometry data to the NVM
44*	No function
45*	No function
46*	No function
47*	No function
48*	Write the NVM test byte as 44(hex)
49*	Write the NVM test byte as FF(hex)

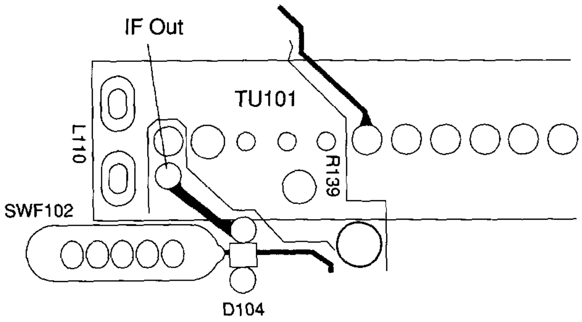
Note : *= Programme number must be set to 59 in order to apply these functions

IF ADJUSTMENT (AUTOMATIC)

1. Input a 38.9 MHz 100dBμ CW signal at the IF Out injection point.
2. Enter into service mode and press 34.
3. Connect a digital voltmeter to IC101 pin ㉓.
4. Check AFT 2.5V ±0.3V dc.
5. Press '00' on the Remote Commander.

SYSTEM L ADJUSTMENT (French Models)

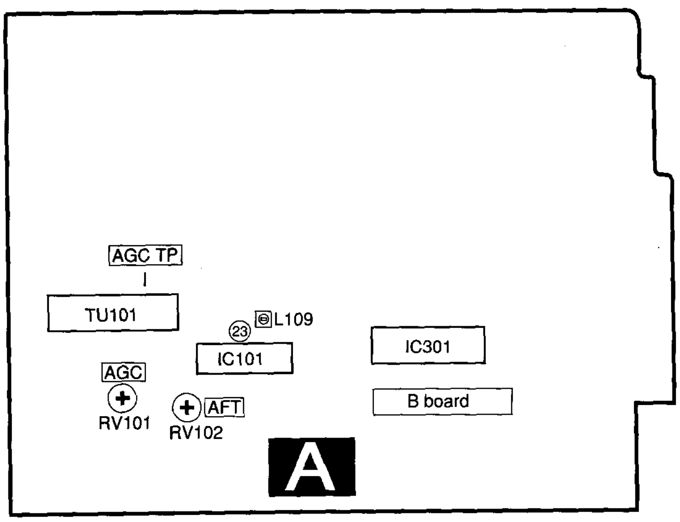
1. Input a 33.9MHz 100dBμ CW signal at the IF Out injection point.
2. From the On Screen Menu set System to L band 1.
3. Connect a digital voltmeter to IC101 pin ㉓.
4. Adjust RV102 AFT for 2.5V ±0.3V dc.



- A Board Print Side -

AGC ADJUSTMENT

1. Receive an off-air signal.
2. Enter into the Service adjust menu and select AGC.
3. Adjust the data using the Red and Yellow buttons on the Remote Commander so that there is no snow or cross - modulation visible on the screen.
4. Change the receiving off-air channel, and confirm the above status.



- A Board Component Side -

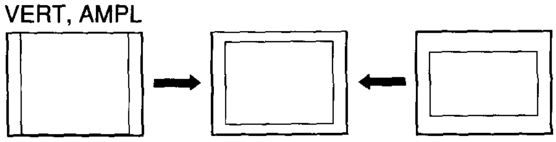
DEFLECTION SYSTEM ADJUSTMENT

1. Enter into the service mode.
2. Using the Blue or Green buttons select the Adjust item.
3. Press the Yellow button to enter the adjustment submenu.
4. Select and adjust each item in order to obtain the optimum image.

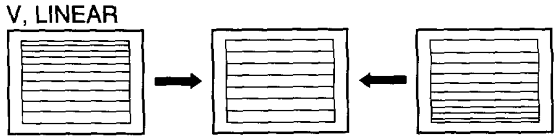
See Note on page 22

Adjustment	Set	Range
VERT, AMPL	Adj	00 - 63
VER, BREATH	00	00 - 63
PAR, AMPL	00	00 - 63
PAR, TILT	32	00 - 63
V, LINEAR	Adj	00 - 63
CORN, CORR	Adj	00 - 63
V, CENTRE	Adj	00 - 63
V, POSITION	42	00 - 63
H, CENTRE	Adj	00 - 63

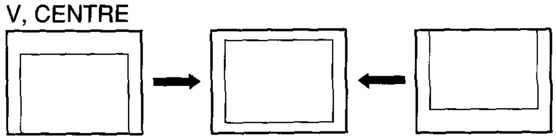
VERT, AMPL



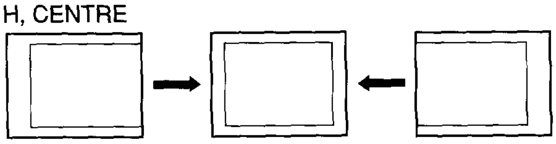
V, LINEAR



V, CENTRE



H, CENTRE



Fit the link as required to obtain the correct horizontal picture size.

4-3. BE-4A SELF DIAGNOSTIC SOFTWARE

The identification of errors within the BE-4A chassis is triggered in 1 of 2 ways :- 1: Bus busy or 2: Device failure to respond to I^2C. In the event of one of these situations arising the software will first try to release the Bus if busy (Failure to do so will report with a continuous flashing LED) and then communicate with each relevant device in turn to establish if a device is faulty. If a device is found to be faulty the relevant device number will be displayed through the LED by a Series of flashes which must be counted (See Table 1)., on fatal errors are reported with this method.

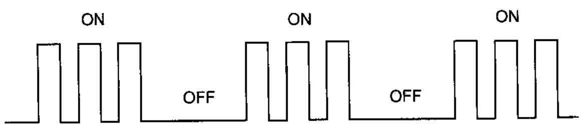
If a fatal error is found, the set will simply stay in whichever state it was when the error occurred, but if a non fatal error occurs the set will try to continue to operate.

Table 1

No. of Flashes	Meaning
2	IC301 not acknowledging I^2C transmission, NVM OK.
3	IC301 FAULT (Not OK) - flags
4	IC301 - No H Flyback
5	IC301 - Stack Overflow
6	Overvoltage / Overcurrent Protection (Pin 52) high.
7	IC002 not acknowledging I^2C transmission, IC301 OK.
8	IC002 and IC301 - No I^2C acknowledgement
9	General I^2C Error (SDA or SCL being held low) (IC301, IC001, IC002, CN001)

Flash Timing Example : e.g. error number 3

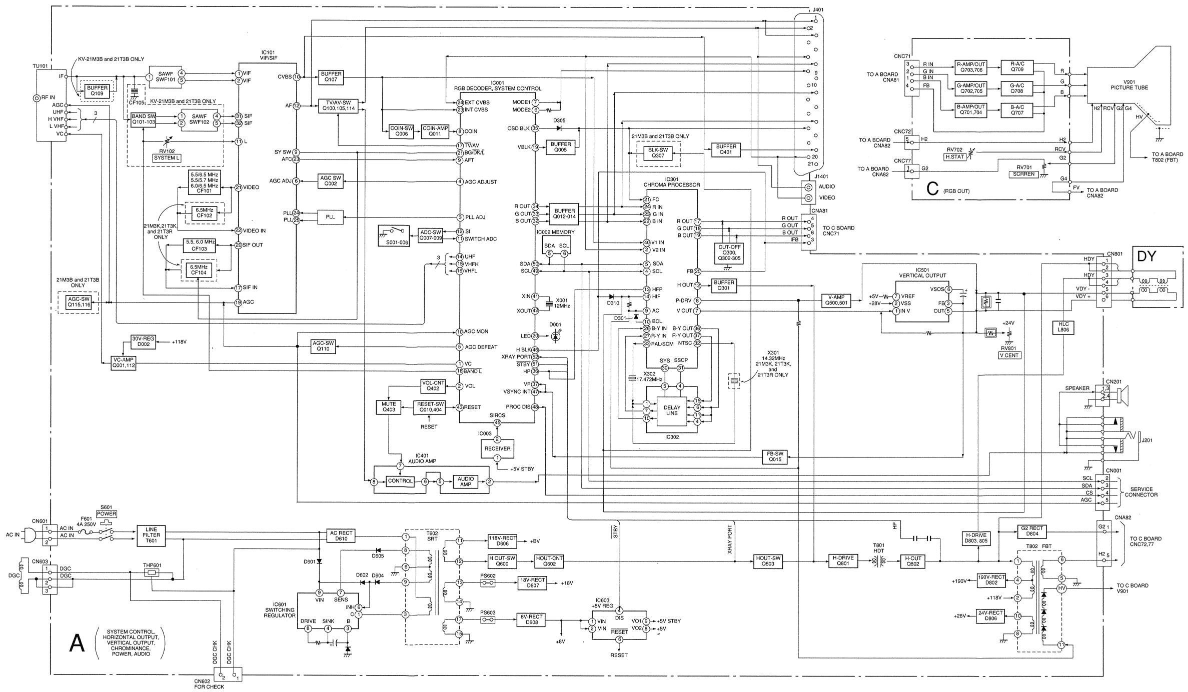
Stby LED



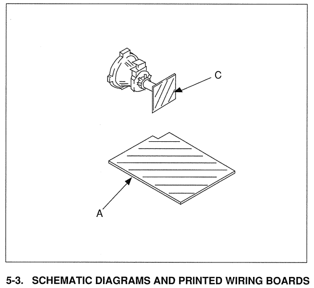
Note : Deflection System Adjustments should not be carried out whilst using an NTSC (60Hz) signal, or if the signal is unlocked.

5.1 BLOCK DIAGRAM

SECTION 5
DIAGRAMS



5-2. CIRCUIT BOARDS LOCATION



5-3. SCHEMATIC DIAGRAMS AND PRINTED WIRING BOARDS

Note :

- All capacitors are in μF unless otherwise noted. pF: μμF 50WV or less are not indicated except for electrolytic and tantalums.
- All resistors are in ohms.
  k = 1000 , M = 1000K
- Indication of resistance, which does not have one for rating electrical power, is as follows.

  Pitch : 5 mm
  Rating electrical power ¼ W

- : nonflammable resistor.
- : internal component.
- : panel designation, or adjustment for repair.
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- ⊥ : earth - ground.
- : earth - chassis.
- # : no mounted.

Note : The components identified by shading and marked ⚠ are critical for safety. Replace only with the part number specified.

Note : Les composants identifies par une trame et une marque ⚠ sont critiques pour la securite. Ne les remplacer que par une piece portant le numero specifie.

Reference information

RESISTOR	: RN	METAL FILM
	: RC	SOLID
	: FPRD	NONFLAMMABLE CARBON
	: FUSE	NONFLAMMABLE FUSIBLE
	: RS	NONFLAMMABLE METAL OXIDE
	: RB	NONFLAMMABLE CEMENT
	: RW	NONFLAMMABLE WIREWOUND
	: ⨯	ADJUSTABLE RESISTOR
COIL	: LF-8L	MICRO INDUCTOR
CAPACITOR	: TA	TANTALUM
	: PS	STYROL
	: PP	POLYPROPYLENE
	: PT	MYLAR
	: MPS	METALIZED POLYESTER
	: MPP	METALIZED POLYPROPYLENE
	: ALB	BIPOLAR
	: ALT	HIGH TEMPERATURE
	: ALR	HIGH RIPPLE

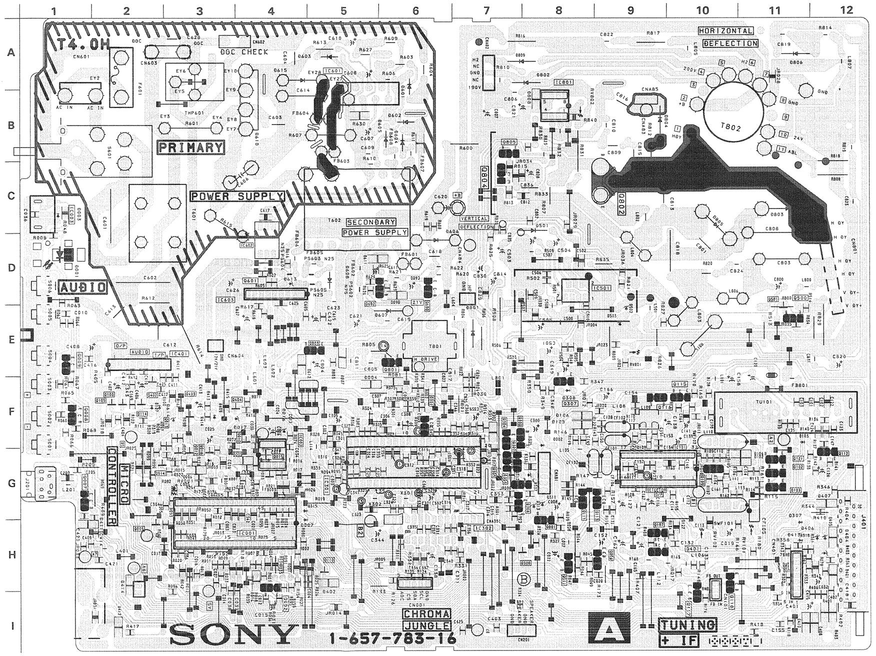
- Readings are taken with a colour-bar signal input.
- Readings are taken with 10M digital multimeter.
- Voltages are dc with respect to ground unless otherwise noted.
- Voltage variations may be noted due to normal production tolerances.
- All voltages are in V.
- Circled numbers are waveform references.
- : B+ bus.
- : signal path. (RF)

A BOARD

IC					
IC001	H-4	Q303	G-7	D401	H-12
IC002	G-4	Q304	F-7	D402	H-5
IC003	C-1	Q305	G-7	D403	H-12
IC101	G-10	Q306	G-8	D404	H-12
IC301	G-5	Q307	F-8	D405	H-12
IC302	H-7	Q308	H-7	D406	H-11
IC401	E-3	Q401	H-10	D407	G-12
IC501	D-9	Q402	F-2	D408	I-12
IC601	A-5	Q403	F-3	D409	F-3
IC603	D-3	Q404	F-4	D410	I-11
TRANSISTOR		Q600	D-6	D412	I-2
Q001	H-8	Q602	D-6	D414	H-2
Q002	I-4	Q801	E-6	D501	D-8
Q005	H-2	Q802	C-9	D600	D-6
Q006	H-9	Q803	E-5	D601	A-6
Q007	G-1	Q804	C-7	D602	B-6
Q008	F-1	Q805	B-7	D603	A-5
Q009	E-1	DIODE		D604	B-6
Q011	H-8	D001	D-1	D605	B-6
Q012	G-3	D002	F-8	D606	D-6
Q013	F-3	D003	C-1	D607	E-6
Q014	G-2	D004	F-5	D608	D-5
Q015	G-4	D005	G-4	D610	B-4
Q016	G-3	D006	G-3	D611	D-6
Q100	F-2	D007	H-4	D612	B-5
Q101	G-11	D014	I-4	D613	E-3
Q102	G-11	D016	G-4	D614	F-3
Q103	G-11	D017	F-4	D801	E-7
Q105	F-2	D100	F-3	D802	A-8
Q107	H-9	D102	G-11	D803	C-11
Q109	G-10	D104	G-11	D805	C-10
Q110	H-5	D105	F-8	D806	A-11
Q111	G-8	D106	F-8	D807	E-5
Q112	G-12	D107	F-2	D809	A-8
Q113	G-9	D109	G-9	VARIABLE RESISTOR	
Q114	F-2	D301	F-6	RV102	H-10
Q115	F-10	D302	F-7	RV801	E-9
Q116	F-9	D305	G-2		
Q300	F-7	D307	H-11		
Q301	F-6	D308	F-8		
Q302	F-7	D310	F-5		
		D315	G-5		

A [SYSTEM CONTROL, HORIZONTAL OUTPUT, VERTICAL OUTPUT, CHROMINANCE, POWER, AUDIO]

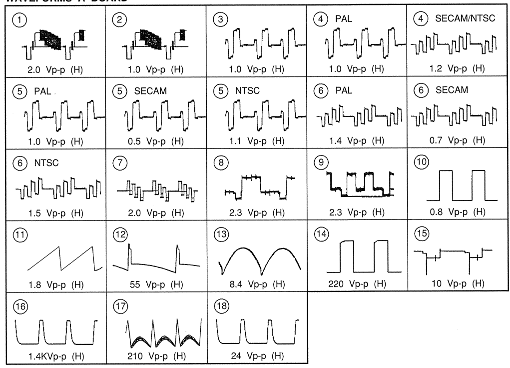
A BOARD



A BOARD *MARK

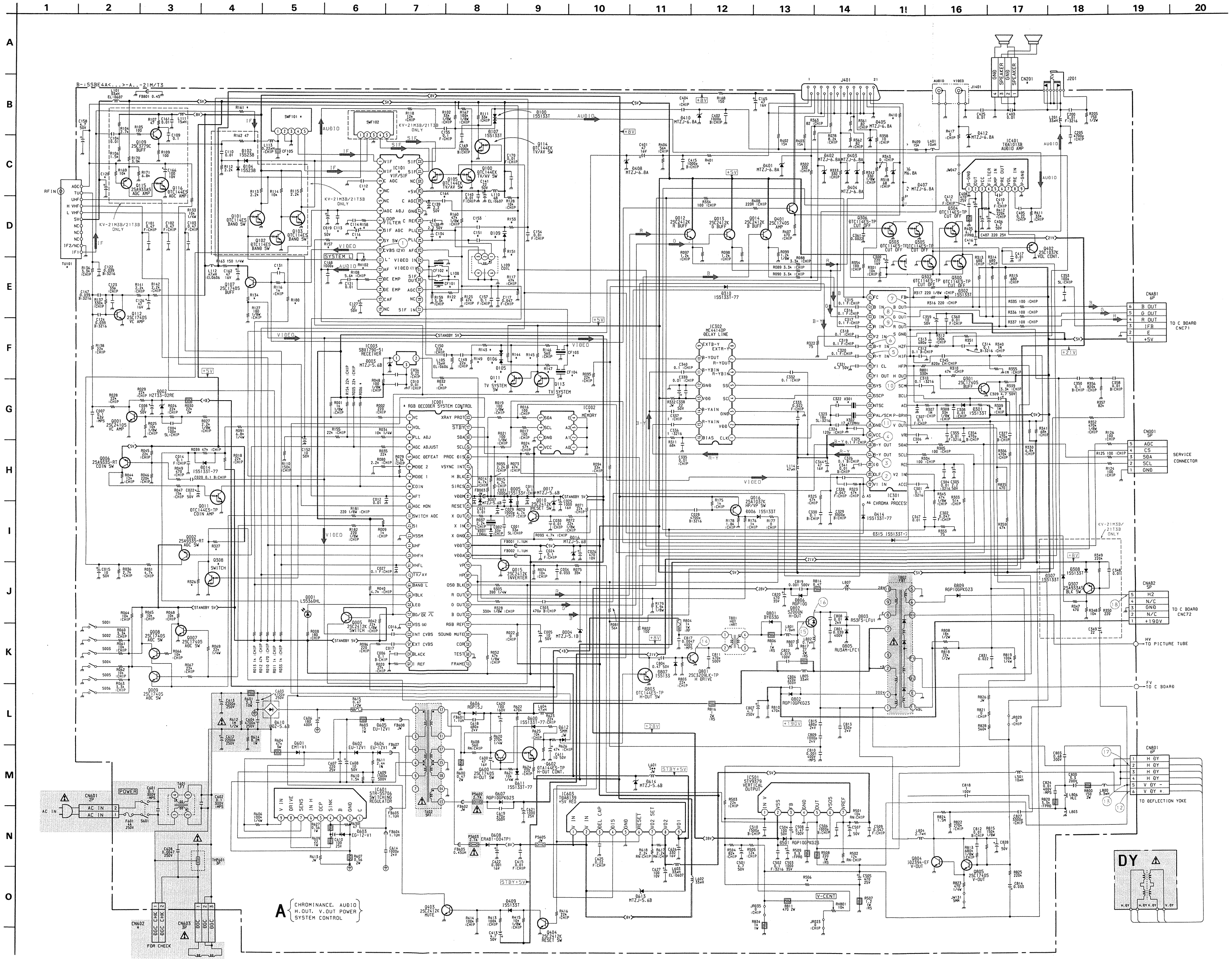
	21M1A/21T1A	21M1B/21T1B	21M1D/21T1D	21M1E/21T1E	21M1K/21T1K	21M1L/21T1L	21T1R	21M1U/21T1U
C16	Refer to "A board * mark-2" table							
C17	Refer to "A board * mark-2" table							
C112	—	0.1MF	—	—	—	—	—	—
C113	—	—	0.01MF	—	—	—	—	—
C114	0.22MF	0.1MF	0.22MF	0.22MF	0.22MF	0.22MF	0.22MF	0.22MF
C116	2.2MF	2.2MF	—	—	—	—	—	—
C120	1000MF	1000MF	470MF	470MF	470MF	470MF	470MF	470MF
C131	—	—	—	—	0.001MF	—	0.001MF	—
C134	7PF	7PF	7PF	7PF	—	—	—	—
C151	—	—	—	—	0.001MF	0.001MF	0.001MF	0.001MF
C153	—	—	—	—	15PF	15PF	15PF	15PF
C164	—	1MF	—	—	—	—	—	—
C205	0.0047MF	0.0047MF	0.0047MF	0.0047MF				
C306	0.082MF 50V	0.082MF 100V	0.082MF 50V	0.082MF 50V	0.082MF 50V	0.082MF 50V	0.082MF 50V	0.082MF 50V
C322	—	—	—	—	18PF	—	18PF	—
C416	0.0047MF	0.0047MF	0.0047MF	0.0047MF	—	—	—	—
CF101	5.5/5.74MHz	5.5/6.5MHz	5.5/5.74MHz	5.5/5.74MHz	5.5/5.74MHz	6.0/6.5MHz	5.5/5.74MHz	6.0/6.5MHz
CF102	—	—	—	—	6.5MHz	—	6.5M,Hz	—
CF103	5.5MHz	5.5MHz	5.5MHz	5.5MHz	5.5MHz	6.0MHz	5.5MHz	6.0MHz
CF104	—	—	—	—	6.5MHz	—	6.5M,Hz	—
CF105	—	5.5MHz	—	—	—	—	—	5.5MHz
CN201	3P	3P	3P	3P	4P	3P	4P	3P
CN602	2P	2P	2P	2P	—	—	—	—
D105	—	—	—	—	1SS133T-77	—	1SS133T-77	—
D106	—	—	—	—	1SS133T-77	—	1SS133T-77	—
D109	—	—	—	—	1SV214-TPH3	1SV214-TPH3	1SV214-TPH3	1SV214-TPH3
IC001	Refer to "A board * mark-2" table							
IC002	Refer to "A board * mark-2" table							
IC101	TDA9806	TDA9812	TDA9806	TDA9806	TDA9806	TDA9806	TDA9806	TDA9806
IC301	MC44007P	MC44002P	MC44002P	MC44007P	MC44002P	MC44007P	MC44002P	MC44007P
JR011	–	0 : CHIP	–	–	–	–	–	–
L108	8.2μH	8.2μH	8.2μH	8.2μH	4.7μH	8.2μH	4.7μH	8.2μH
Q111	–	–	–	–	DTC144ES-TP	–	DTC144ES-TP	–
Q113	–	–	–	–	DTC144ES-TP	–	DTC144ES-TP	–
Q308	–	DTC144EK-T146	DTC144EK-T146	–	DTC144EK-T146	–	–	–
R006	47K	33K	33K	47K	33K	47K	33K	47K
R122	150	150	150	150	100	150	100	150
R134	180	180	180	180	180	150	180	150
R143	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP	–	0 : CHIP	–	0 : CHIP
R144	–	–	–	–	2.2K	–	2.2K	–
R145	–	–	–	–	2.2K	–	2.2K	–
R147	–	–	–	–	560	–	560	–
R149	–	–	–	–	2.2K	–	2.2K	–
R151	–	–	–	–	100K	100K	100K	100K
R153	–	–	–	–	100K	100K	100K	100K
R157	–	1K	–	–	–	–	–	–
R158	390	180	390	390	390	390	390	390
R161	0 : CHIP	–	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP	0 : CHIP
R162	–	47	–	–	–	–	–	–
R180	–	1K	–	–	–	–	–	–
R326	–	82K	82K	–	82K	–	82K	–
R327	–	100K	100K	–	100K	–	100K	–
R351	–	8.2M	8.2M	–	8.2M	–	8.2M	–
R401	1K	1K	1K	1K	470	470	470	470
R410	75	75	75	75	75	68	75	68
R506	20K 0.5%	20K 0.5%	20K 0.5%	20K 0.5%	20K 5%	20K 5%	20K 5%	20K 5%
RV102	–	22K	–	–	–	–	–	–
SWF101	OPWG1963	OFWK3953	OPWG1963	OPWG1963	OFWK2950	OFWJ1952M	OFWK2950	OFWJ1952M
TU101	BT-AU601	TEL4-002B	TEL4-002B	BT-AU601	BT-AC401	UV1315	TEL4-002B	BT-AU601
X301	–	–	–	–	14.32MHz	–	14.32MHz	–

WAVEFORMS A BOARD



A BOARD *MARK-2

C16	0.1MF	KV-21T3A/21T3B/21T3D/21T3E/21T3K/21T3L/21T3R/21T3U
C17	0.1MF	KV-21T3A/21T3B/21T3D/21T3E/21T3K/21T3L/21T3R/21T3U
IC001	SAA5288ZP/M1/025	KV-21M3A/21M3B/21M3D/21M3E/21M3K/21M3L/21M3U
IC001	SAA5498ZP/M1/014	KV-21T3A/21T3B/21T3E/21T3K/21T3L/21T3U
IC001	SAA5498ZP/M1/016	KV-21T3D
IC001	SAA5498ZP/M1/015	KV-21T3R
IC002	ST24C04FB6	KV-21M3A/21T3A/21M3B/21T3B/21M3D/21T3D/21M3E/21T3E/ 21M3K/21M3L/21T3L/21T3R/21M3U/21T3U
IC002	ST24C02FB6	KV-21T3K



A BOARD IC VOLTAGE TABLE

Ref No	Pin No	Voltage (V)
IC001	1	0.7
	2	0
	3	2.8
	4	0
	6	0
	7	2.0
	8	5.1
	9	3.0
	11	1.6
	12	5.0
	14	4.1
	15-16	0.1
	17	0
	18	4.3
	19	0
	20	4.0
	21	5
	23	2.3
	24	0
	25	2.1
	26	2.4
	30-31	5.0
	32-35	0
	36	0.3
	37	0.2
	40	0
	41	2.0
	42	2.5
	43	0
	44	5.0
	45	3.4
	46	0
	47	0.2
	48	2.5
	49-51	5.0
	52	0.1

Ref No	Pin No	Voltage (V)
IC002	5-6	5.0
IC003	1-2	5.0
IC101	1-2	3.3
	3	0.6
	6	1.0
	7-8	2.5
	9	5.0
	10	2.2
	11	4.0
	12-14	2.4
	15	2.0
	17	2.6
	19	1.8
	20-21	2.0
	22	0
	23	3.0
	24-25	2.6
	26	2.4
	28	3.0
	31-32	3.2
IC301	1	0.5
	2	0.8
	3	1.3
	4-5	5.0
	6	0.9
	7	2.3
	8	0.6
	9	1.2
	10	2.5
	11	2.3
	12	0.4
	13	0.5
	14	0.2
	15	2.0
	16	0
	17	2.2

Ref No	Pin No	Voltage (V)
IC301	18	2.1
	19	2.0
	20	3.4
	21	0
	22-24	3.0
	25-27	3.1
	28	0.9
	30	0
	31	1.3
	33	2.0
	34	0
	36	2.6
	37	2.3
	38	1.0
	39	2.0
	40	3.0
IC302	1	1.5
	3	0
	4	1.3
	5	0
	6-7	1.5
	10-11	1.4
	12	0
	14	1.1
	15	1.2
	16	1.5
IC401	2	8.8
	4	18.0
	5	1.3
	6	6.7
	7	2.0
	8	2.8

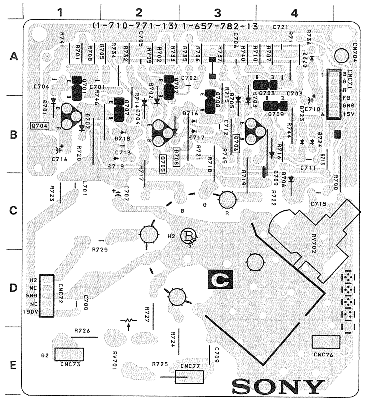
Ref No	Pin No	Voltage (V)
IC501	1	2.7
	3	1.2
	5	18.0
	6	26.0
	7	2.7
IC601	1	333.0
	2-3	0
	4	0.4
	5	0
	6	1.5
	7	31.6
	8	0.3
	9	8.1
IC603	3	3.0
	4	5.0
	6	2.1
	7	2.5

A BOARD TRANSISTOR VOLTAGE TABLE

Ref No	B Base	C Collector	E Emitter
Q001	0.2	13.5	-
Q005	0	5.0	0
Q006	4.7	0.6	5.0
Q007	0.6	0	-
Q008	0	5.1	4.5
Q009	5.0	5.1	4.5
Q010	0.6	0	-
Q011	5.0	5.0	-
Q012	0	5.0	0
Q013	0	5.0	0
Q014	0	5.0	0
Q100	0	2.0	-
Q101	4.3	0	-
Q102	4.3	0	-
Q103	0	4.7	-
Q105	0	2.7	-
Q107	3.0	7.7	2.1
Q112	0.6	2.2	-
Q114	2.0	0	-
Q300	-	2.0	0
Q301	0.3	0.6	0
Q302	0	2.1	0
Q303	0	2.2	0
Q304	0	2.0	-
Q305	0	2.1	-
Q306	0	2.2	-
Q307	11.6	0.3	8.6
Q401	2.2	8.0	1.6
Q402	1.3	-	2.0
Q403	0	1.3	-
Q404	0.5	0	-
Q600	1.0	0.4	0.4
Q602	0.4	8.4	8.4
Q801	0	105.0	-
Q802	-0.2	120.0	0
Q803	0.1	0.6	-

C [R,G,B OUT]

C BOARD

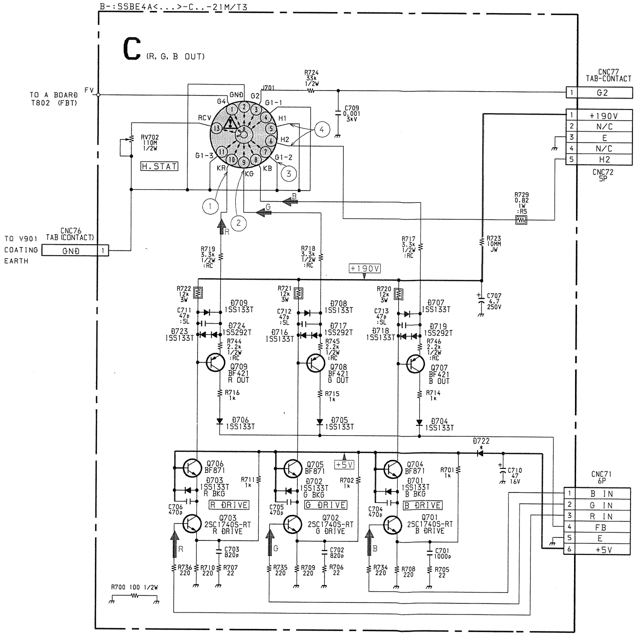


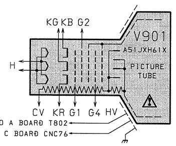
C BOARD
TRANSISTOR VOLTAGE TABLE

Transistor Voltage Table			
Ref No	B Base	C Collector	E Emitter
Q701	2.1	-	1.5
Q702	2.1	-	1.5
Q703	2.1	-	1.5
Q704	5.0	154.8	4.25
Q705	5.0	149.3	4.25
Q706	5.0	150.2	4.25
Q707	155.3	3.4	153.8
Q708	149.7	3.3	148.2
Q709	151.0	3.3	146.5

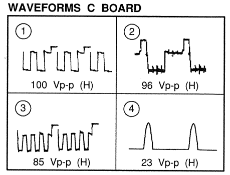
C BOARD *MARK

	21M1A/21T1A	21M1B/21T1B	21M1D/21T1D	21M1E/21T1E	21M1K/21T1K	21M1L/21T1L	21T1R	21M1U/21T1U
D722	ISS133T-77	ISS133T-77	ISS133T-77	ISS133T-77	–	–	–	–

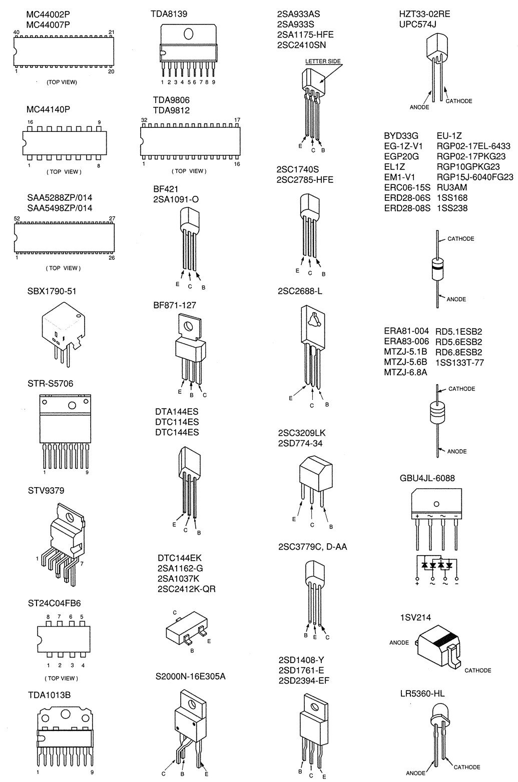




WAVEFORMS C BOARD

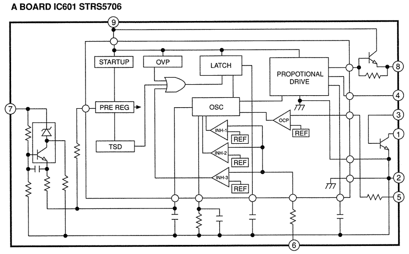


5-4. SEMICONDUCTORS



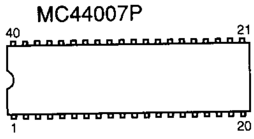
5.5 IC BLOCK DIAGRAMS

A BOARD IC601 STRS5706

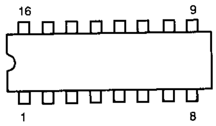


5-4. SEMICONDUCTORS

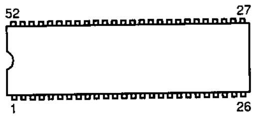
MC44002P
MC44007P



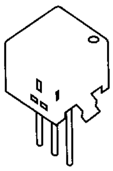
MC44140P



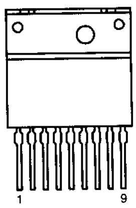
SAA5288ZP/014
SAA5498ZP/014



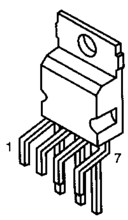
SBX1790-51



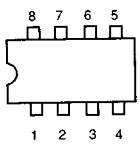
STR-S5706



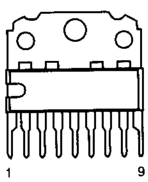
STV9379



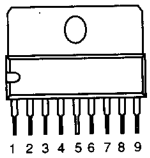
ST24C04FB6



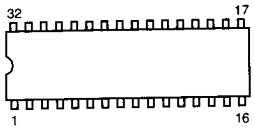
TDA1013B



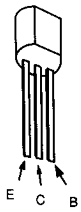
TDA8139



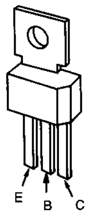
TDA9806
TDA9812



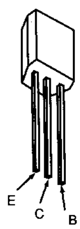
BF421
2SA1091-O



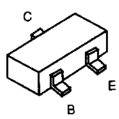
BF871-127



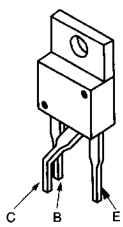
DTA144ES
DTC114ES
DTC144ES



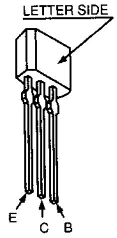
DTC144EK
2SA1162-G
2SA1037K
2SC2412K-QR



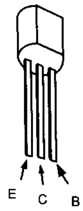
S2000N-16E305A



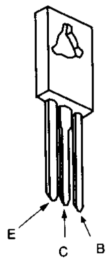
2SA933AS
2SA933S
2SA1175-HFE
2SC2410SN



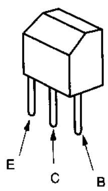
2SC1740S
2SC2785-HFE



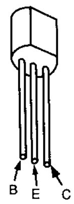
2SC2688-L



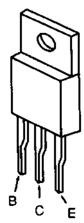
2SC3209LK
2SD774-34



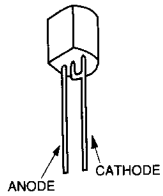
2SC3779C, D-AA



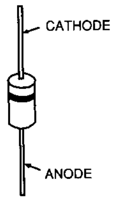
2SD1408-Y
2SD1761-E
2SD2394-EF



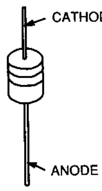
HZT33-02RE
UPC574J



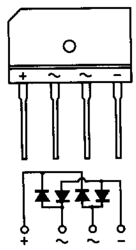
BYD33G	EU-1Z
EG-1Z-V1	RGP02-17EL-6433
EGP20G	RGP02-17PKG23
EL1Z	RGP10GPKG23
EM1-V1	RGP15J-6040FG23
ERC06-15S	RU3AM
ERD28-06S	1SS168
ERD28-08S	1SS238



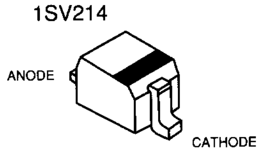
ERA81-004	RD5.1ESB2
ERA83-006	RD5.6ESB2
MTZJ-5.1B	RD6.8ESB2
MTZJ-5.6B	1SS133T-77
MTZJ-6.8A	



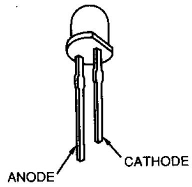
GBU4JL-6088



1SV214

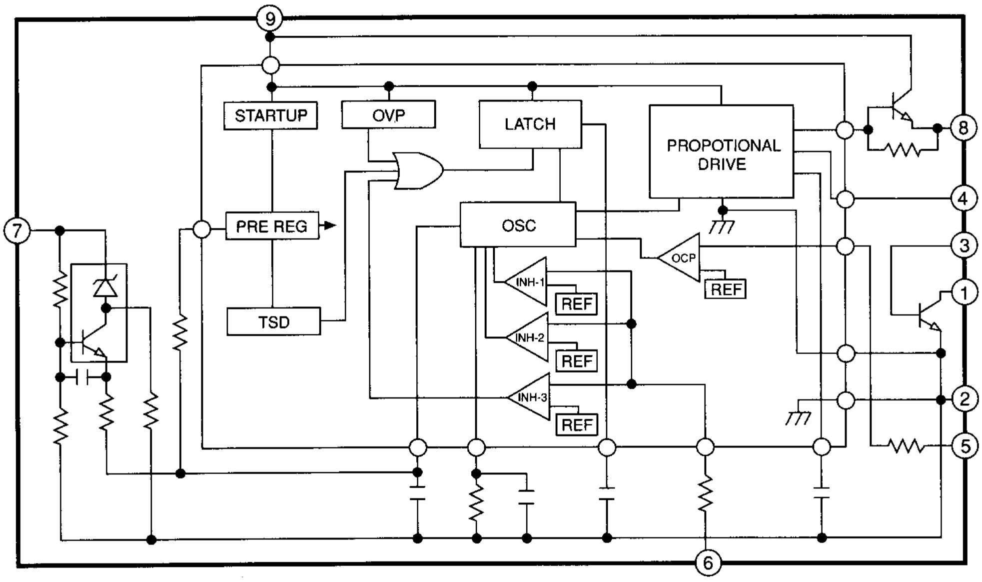


LR5360-HL

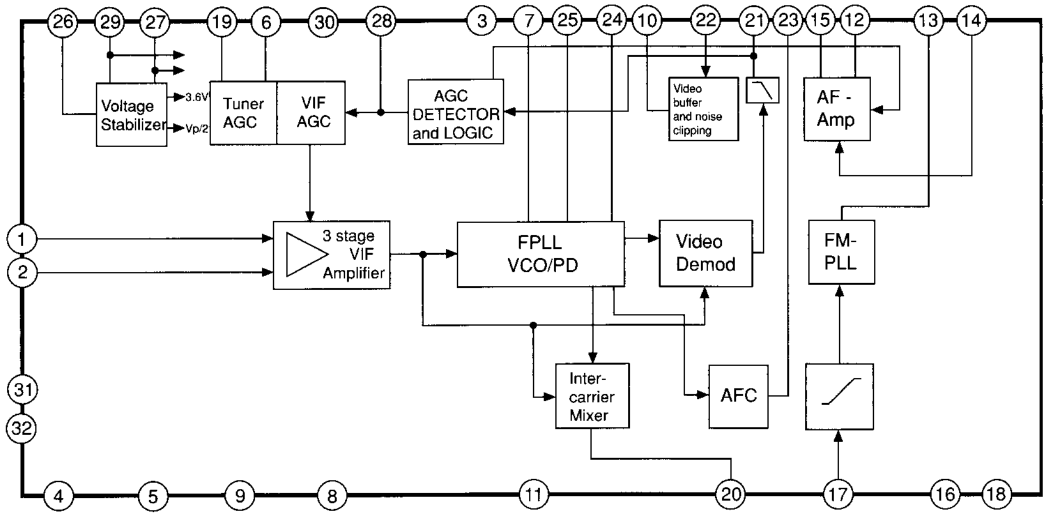


5.5 IC BLOCK DIAGRAMS

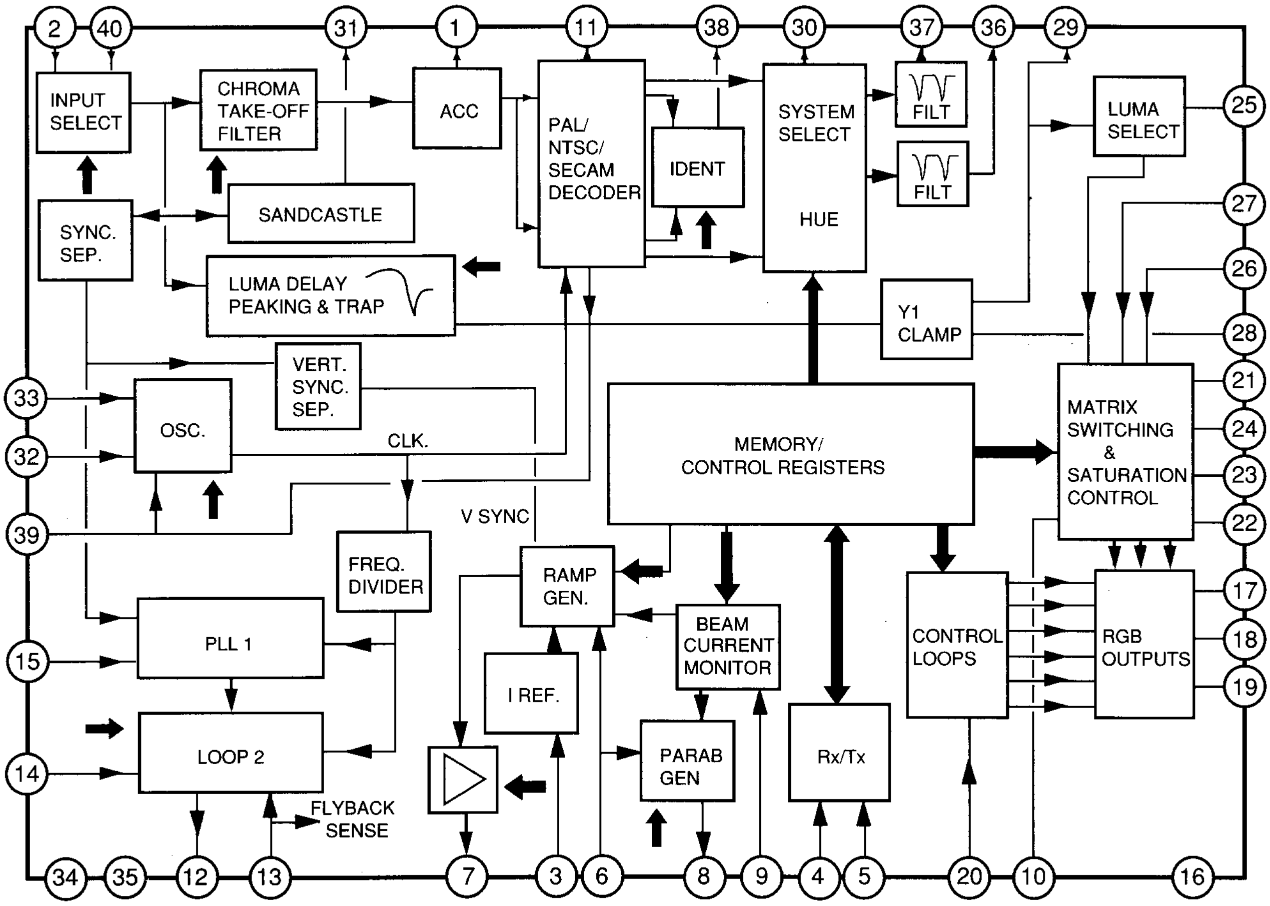
A BOARD IC601 STRS5706



A BOARD IC101 TDA9806/TDA9812



A BOARD IC301 MC44002/MC44007P



6-1. CHASSIS

■ : +BVTP 3x12 7-685-648-79

● : +BVTP 4x16 7-685-663-79

